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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/893,207	06/27/2001	John Michael Cotte	YOR920010091US1(14299)	5007

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Steven Fischman, Scully, Scott, Murphy & Presser
400 Garden City Plaza
Garden City, NY 11530

EXAMINER	
PERKINS, PAMELA E	
ART UNIT	PAPER NUMBER
2822	

DATE MAILED: 06/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/893,207	Applicant(s) COTTE ET AL.	
	Examiner Pamela E Perkins	Art Unit 2822	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 May 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

This office action is in response to the filing of the RCE on 23 May 2003. Claims 1-20 are pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 2, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koch (6,331,487) in view of Uzon et al. (6,355,153) and Agnello (5,897,349).

Koch discloses a method of cleaning a precision surface where a substrate is cleaned, after planarizing a surface of the substrate, using a surfactant ,supercritical carbon dioxide, and a co-solvent, a fluoride, at a temperature of 20 to 70^{o}C and a pressure of 1050 to 6000 psig to remove residue from the surface of the substrate (col. 1, line 62 thru col. 3, line 35). Koch does not disclose the precision surface having vias, cavities, trenches or channels or removing reactive ion etch residue.

Uzon et al. disclose a method of making a semiconductor device where a conductive layer is planarized after being deposited onto a substrate. Uzon et al. further disclose the substrate comprising vias, trenches or cavities (col. 1, lines 15-25).

Since Koch and Uzon et al. are both from the same field of endeavor, a method of making a semiconductor device, the purpose disclosed by Uzon et al. would have been recognized in the pertinent art of Koch. Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to modify Koch by the precision surface having vias, trenches, cavities or channels as taught by Uzon et al. to connect layers and components therein (col. 1, lines 18-21).

Agnello discloses a method of making a semiconductor device where a conductive layer (9) is formed over a substrate; applying a reactive ion etch to pattern the conductive layer (9) (col. 4,lines 58-65) and then cleaning the cleaning the reactive ion etch residue (col. 5, lines 27-32).

Since Koch and Agnello are both from the same field of endeavor, a method of making a semiconductor device, the purpose disclosed by Agnello would have been recognized in the pertinent art of Koch. Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to modify Koch by removing reactive ion etch residue as taught by Agnello using a reactive ion etch etches the conductive layer at a greater rate (col. 5, lines 55-66).

Claims 3-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koch in view of Uzon et al. and Agnello as applied to claims 1, 2, 15 and 16 above, and further in view of Alm *Formulation Techniques Using Triflic Acid Salts*.

Koch discloses a method of cleaning a precision surface where a substrate is cleaned, after planarizing a surface of the substrate, using a surfactant ,supercritical carbon dioxide, and a co-solvent, a fluoride, at a temperature of 20 to 70^{o}C and a

pressure of 1050 to 6000 psig to remove residue from the surface of the substrate (col. 1, line 62 thru col. 3, line 35). Koch in view of Uzon et al. and Agnello do not disclose the fluoride selected from a group comprising fluorosulfonic acid, perfluorosulfonic acid, pyridine:hydrogen fluoride, amine:hydrogen fluoride, alklamine:hydrogen fluoride, quaternary amine fluoride, tetraalkylammonium fluoride, perfluoroalkylammonium fluoride, trifluoromethylsulfonyl fluoride, perfluorooctylsulfonyl fluoride, arylsulfonyl fluoride, benzene diazonium fluoride and benzene diazonium tetrafluoroborate.

Alm disclose a method of fluoride compounds where fluorosulfonic acid, perfluorosulfonic acid, pyridine:hydrogen fluoride, amine:hydrogen fluoride, alklamine:hydrogen fluoride, quaternary amine fluoride, tetraalkylammonium fluoride, perfluoroalkylammonium fluoride, trifluoromethylsulfonyl fluoride, perfluorooctylsulfonyl fluoride, arylsulfonyl fluoride, benzene diazonium fluoride and benzene diazonium tetrafluoroborate are used in coating processes (page 1; table 1-2).

Since Koch and Alm are both from the same field of endeavor, a method of cleaning, the purpose disclosed by Alm would have been recognized in the pertinent art of Koch. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Koch by selecting a fluoride from a group comprising fluorosulfonic acid, perfluorosulfonic acid, pyridine:hydrogen fluoride, amine:hydrogen fluoride, alklamine:hydrogen fluoride, quaternary amine fluoride, tetraalkylammonium fluoride, perfluoroalkylammonium fluoride, trifluoromethylsulfonyl fluoride, perfluorooctylsulfonyl fluoride, arylsulfonyl fluoride, benzene diazonium fluoride

and benzene diazonium tetrafluoroborate as taught by Alm to act as a catalyst in reactions in coating processes (page 1).

Claims 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koch in view of Uzon et al. and Agnello as applied to claims 1, 2, 15 and 16 above, and further in view of Hirayama et al. (6,316,057).

Koch discloses a method of cleaning a precision surface where a substrate is cleaned, after planarizing a surface of the substrate, using a surfactant ,supercritical carbon dioxide, and a co-solvent, a fluoride, at a temperature of 20 to 70^{o}C and a pressure of 1050 to 6000 psig to remove residue from the surface of the substrate (col. 1, line 62 thru col. 3, line 35). Koch in view of Uzon et al. and Agnello do not disclose the substrate comprising a metal, the metal selected from a group consisting of aluminum, silicon, tungsten, titanium, tantalum, platinum, palladium, iridium, chromium, copper and silver and a polymer selected from a group consisting of polyimides and polyamides or insulators.

Hirayama et al. disclose a method of making a semiconductor device where a substrate is coated with a material selected from a group comprising aluminum, silicon, tungsten, titanium, tantalum, platinum, palladium, iridium, chromium, copper and silver and a polymer selected from a group consisting of polyimides and polyamides or insulators (col. 1, lines 62-67; col. 3, lines 24-60).

Since Koch and Hirayama et al. are both from the same field of endeavor, a method of cleaning, the purpose disclosed by Hirayama et al. would have been recognized in the pertinent art of Koch. Therefore, it would have been obvious to one

ordinary skill in the art at the time the invention made to modify Koch by the substrate comprising a metal, the metal selected from aluminum, silicon, tungsten, titanium, tantalum, platinum, palladium, iridium, chromium, copper and silver and a polymer selected from a group consisting of polyimides and polyamides or insulators as taught by Hirayama et al. to form well-adhered thin layers on the substrate (col. 1, lines 62-67).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pamela E Perkins whose telephone number is (703) 605-4299. The examiner can normally be reached on Monday thru Friday, 9:00am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on (703) 308-4905. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

AMIR ZARABIAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

pep
June 23, 2003